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Difficult Airway Management Of A Patient With Myasthenia Gravis During Aeromedical Transportation

M Inal, S Inal, C Inal

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Abstract

Myasthenia gravis is a chronic autoimmune disease characterized by varying degrees of weakness of the skeletal muscles of the body. The severe weakness of the muscles may cause respiratory failure, which requires immadiate emergency medical care. We now describe a difficult intubation in a patient with myasthenia gravis while transport with a plane.

INTRODUCTION

Myasthenia gravis is a chronic autoimmune disease characterized by varying degrees of weakness of the skeletal muscles of the body. The muscles that control breathing and neck and limb movements may also be affected. The severe weakness of the muscles may cause respiratory failure, which requires immadiate emergency medical care. Aeromedical transport is used for several years for transport of critical patients. In the literature there are many case reports about myasthenia gravis and difficult intubation, but to this date there is no case report about difficult intubation in a patient with myasthenia gravis during aeromedical transport. We now describe a difficult intubation in a patient with myasthenia gravis while transport with a plane.

CASE REPORT

A 76-yr-old, 90 kg, 155 cm woman presented to the emergency room with dyspnea. She had myasthenia gravis for four years. One day prior to presentation she felt paralysis in her legs. A few hours later generalize paralysis was started. This prompted her to seek attention at a medical center. She complained of throat tightness, generalyze paralysis and mild respiratory distress. Her vital signs showed a heart rate of 108 beats·min-1, blood pressure of 128/97 mm Hg, respiratory rate of 20 breaths·min-1, oxygen saturation of 90 % on room air and temperature of 36.5 °C. She had generalize paralysis. With dyspnea and story of myasthenia gravis the patient presented to an intensive care. After the first examination 02 was started to given with an airway mask. One day later becouse of the poor medical conditions in the intensive care unit, the patient planned to transport to better intensive care unit with plane. The patient transported to the plane with an ambulance. Her vital signs showed a heart rate of 98 beats·min-1, blood pressure of 113/73 mm Hg, respiratory rate of 17 breaths·min-1, oxygen saturation of 93 % with 2L/min 02 and temperature of 36.5 °C. After presenting to the aircraft the patient stabilized carefully and 2lt/min 02 started to given nasally. There was an anesthesiology and reanimation specialist, a paramedic and a nurse in the plane. After the plane takeoff and rise to approximately 15000 feet, oxygen saturation was decreased to 85%. The patient said that she can not easyly breath. After that the patient became confuse and breathing was stopped. Manuel ventilation using a reservoir bag attached to a circle breathing system and facemask required two people and was difficult. With oxygen 100%, continous positive airways pressure, the oxygen saturation steadily recovered to 92%. A grade 3 view of the larynx with evidence of a degree of airway swelling was obtained using a Macintoch laryngoscope with size 3 blade. Readjustment of the head position and changing to alonger blade did not improve the view(Cormarc-Lehane grade 4). Two attempts at intubation using a gum elastic bougie failed becouse the bougie could not passed into the trachea. The oxygen saturation decreased to 60%. Luckily there was a LMA in the plane and this LMA was inserted into the oral cavity. Using manual ventilation with oxygen 100% through the LMA the patient's oxygen saturation increased to 98%. The patient was now regaining consciousness but remained partially paralised. After 1 and half hour travel, patient presented to another intensive care unit. In the intensive care she intubated using a fast-track device.

After two days in intensive care she extubated and 5 days after she discharged from the hospital.

DISCUSSION

The transport of critically ill patients always involves some degree of risk. Therefore, the decision to transport must be based on an assessment of the potential benefits of transport weighed against the potantial risks(1). A succesful aeromedical transfer requires good knowledge of the potential pitfalls, the aircraft,the drugs, the equipment and the physiological environment associated with altitude(2).

The transport of critically ill patients was complicated by the illness of the patient and the physiological effects of altitude. Physiological effects of altitude were as follows: cabin pressure varieses, hypoxia, expansion of gases, low humidity, prolonged immobility, motion sickness and low temperature. The older person may be more susceptible to complications during transport(3,4,5).

In the literature there was no data about transport of the patients with myasthenia gravis.

For the crew in the plane especially for the anesthesiology specialist difficult airway management and difficult intubation was awful. According to many guidelines in the literature; larngoscope, endotracheal tubes(multipl sizes), airways(multipl sizes), introducer, magill forceps, catheter mount, lubricating jelly, tie, artery forceps, miniyrac and humidification filter were the contents of emergency/resuscitation bag for the plane(2-10).

We think that this equipment was enough for intubation but not enough for difficult intubation. A; LMA and combitube must be placed in the emergency bag. Also becouse of limited area in the plane, noisea, vibration and turbulance airway management would be difficult. Experience is so important.

In conclusion; this case report showed that all kinds of transport of critically ill patients needs experience. All equipment should be flight certified and the staff should be familiar with its use. Proper planning is essential. The patient must select carefully.

CORRESPONDENCE TO

Mehmet Turan Inal MD Trakya Univercity Faculty of Medicine Department of Anaesthesiology and Reanimation 22030 Edirne / Turkey Tel: +902842357641 Fax: +902842358096 e-mail: mehmetturaninal@yahoo.com

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Author Information

Mehmet Turan Inal, M.D.
Department of Anaesthesiology and Reanimation, Trakya Unıvercity Faculty of Medicine

Sermet Inal, M.D.
Department of Trauma and Orthopedics, Ankara Research Hospital

Canan Inal, M.D.
Department of Anaesthesiology and Reanimation, Ankara Research Hospital